PATENT

TITLE: BIOSENSOR APPARATUS AND METHOD WITH SAMPLE TYPE AND VOLUME DETECTION

ABSTRACT OF THE DISCLOSURE

A biosensor apparatus and method with sample type and cell volume detection. The apparatus includes a sine wave generator to apply an AC signal to a biosensor cell containing a sample, a current-to-voltage converter, a phase shifter, a square wave generator, a synchronous demodulator, and a low pass filter which yields a signal proportional to the effective capacitance across the biosensor cell, which is proportional to the volume of the sample. In addition, the current-to-voltage converter yields a signal indicative of the type of sample contained within the biosensor cell. The method includes applying a sine wave to the biosensor cell, shifting the phase of the resultant signal, generating a square wave synchronous with the sine wave, demodulating the resultant signal with the square wave, and filtering the demodulated signal to produce a signal proportional to the effective capacitance across the biosensor cell. The biosensor apparatus and method are capable of determining sample type and measuring glucose levels over a wide range of sample volumes.